

Two interesting new ground spiders (Araneae) from the Canary Islands and Greece

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Abstract

A new *Zelotes* species from the *tenuis* group, *Zelotes henderickxi*, is described from Tenerife, Canary Islands. A new and remarkable spider genus from the Greek Peloponnese, *Vankeeria*, is described, and attributed to Liocranidae. The genus is monotypic and known to date only from the type species, *Vankeeria catoptronifera*.

Keywords: Arachnida, Araneae, Liocranidae, Gnaphosidae, Mediterranean, Greece, Canary Islands, *Zelotes henderickxi*, *Vankeeria catoptronifera*.

Introduction

Field work in subtropical and tropical regions frequently turns up spider specimens that can not be identified. In a number of cases, these specimens can be recognised as new and can be attributed to a genus or family, but are not described nevertheless, because only one sex or one specimen is available. This is especially true for difficult families such as Lycosidae or Gnaphosidae, and for less studied families such as Liocranidae and Corinnidae. Although it is understandable that authors prefer a larger number of specimens to base a description on, this practice hampers faunistic work executed in many interesting regions. In the present contribution, two remarkable ground spider species known from only a single specimen are described.

Methods

Specimens were observed, photographed and drawn using Euromex MIC465 and Olympus SZX9 binocular microscopes. Tarsal claws were observed, photographed and drawn using a Wild M12 compound microscope. All micrographs were made with a Praktica DC440 digital camera. All measurements are in millimetres. The format for leg spination follows Platnick & Shadab (1975), amended for ventral spine pairs according to Bosselaers & Jocqué (2000). Leg spination is also illustrated in a schematic representation (Figs. 14, 15) where pl, do, rl and ve sides of leg articles are flattened as a folding net (Dürer, 1525).

Abbreviations used: AE, anterior eyes; AER, anterior eye row; ALE, anterior lateral eyes; ALS, anterior lateral spinnerets; AME, anterior median eyes; CO, copulatory openings; do, dorsal; fe, femur; fr, frontal; ICS, intercoxal sclerites - ICS are six small triangular or elongated sclerites surrounding the sternum, their tips penetrating between the coxae of the legs - they may be free, or fused with the sternum (Bosselaers & Jocqué, 2002: fig. 1K); MA, median apophysis; MOQ, median ocular quadrangle; mt, metatarsus; pa, patella; PCT, precoxal triangles - PCT are small triangular sclerites surrounding the sternum, their tips facing the bases of the coxae (Penniman 1985: 16) - they may be free, or fused with the sternum (Bosselaers & Jocqué, 2002: fig. 1K); PER, posterior eye row; pl, prolateral; PLB, pleural bars - PLB are narrow, horizontal sclerites between coxae and carapace, one above each coxa (“pièces épimériennes” of Simon (1892: 11, fig. 29)) - they may be fused among each other (Bosselaers & Jocqué, 2002: fig. 1P), with intercoxal sclerites and/or with carapace; PLE, posterior lateral eyes; PLS, posterior lateral spinnerets; plv, prolateral ventral; PME, posterior median eyes; PMS, posterior median spinnerets; rh, retrocoxal hymen - the retrocoxal hymen is a weak spot, in most cases hyaline and lens- to dome-shaped, on the retrolateral face of coxa I (Raven, 1998; Bosselaers & Jocqué, 2002); rl, retrolateral; rlv, retrolateral ventral; RTA, retrolateral tibial apophysis; ta, tarsus; ti, tibia; ve, ventral; vt, ventral terminal; w, width.

Abbreviations of personal and institutional collections (curator in parentheses):

CJB, personal collection Jan Bosselaers

CJVK, personal collection Johan Van Keer

RBINS, Royal Belgian Institute of Natural Sciences, Brussels (L. Baert)

Taxonomy

Family Gnaphosidae

Zelotes Gistel, 1848

Zelotes henderickxi sp. n.

Figs. 1, 7-9, 14.

Type material. Holotype male, Spain, Canary Islands, Tenerife, Puerta de la Cruz, hand captured, 12 August 1994, H. Henderickx leg. [CJB1166], deposited in RBINS.

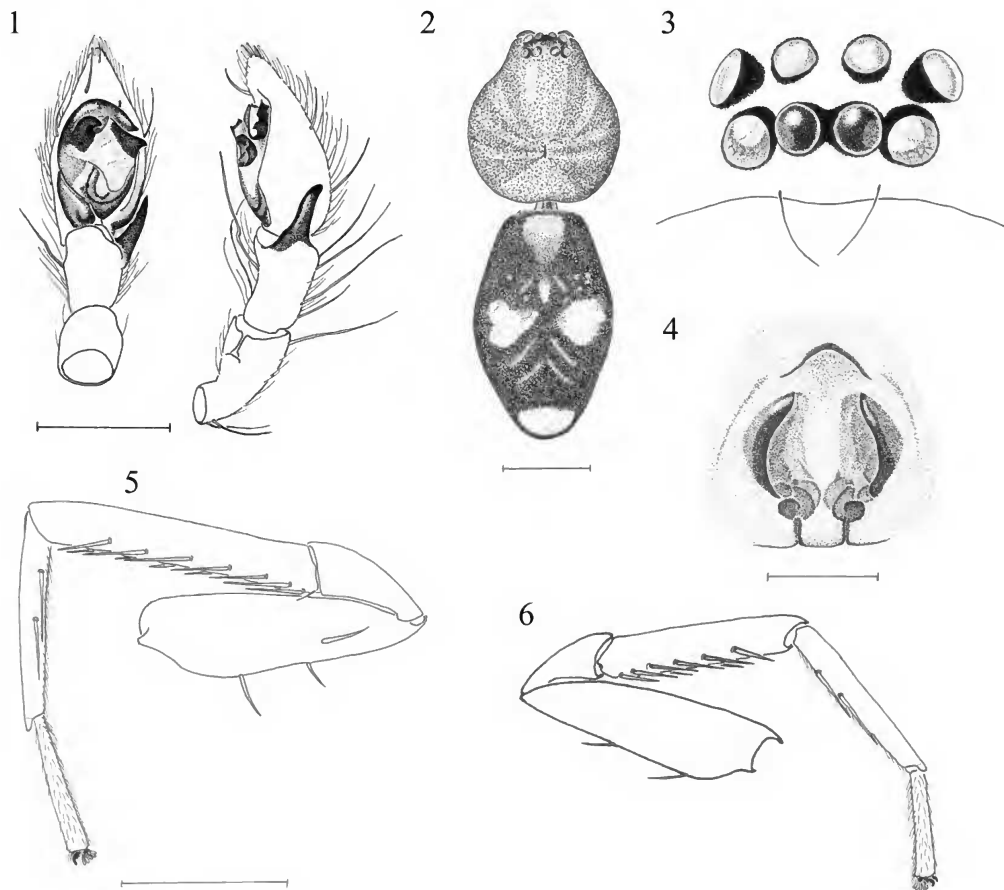
Diagnosis

Z. henderickxi is similar to *Z. manytchensis* (Ponomarev & Tsvetkov, 2006) by the shape of the arched embolar base, the MA and the terminal apophysis (Senglet, 2011), but differs from it by its larger size, a simpler embolus shape, a shorter do abdominal scutum and an RTA which is shorter than the ti. *Z. henderickxi* is also close to *Z. fusciorufus* (Simon, 1878), but differs from it by its larger size, a larger terminal apophysis, a less vertically oriented embolar base and a simple RTA. *Z. henderickxi* differs from all other species in the *Z. tenuis* group by its small PME (Senglet, 2011: 515).

Description

Male (holotype). Total length 6.25. Carapace length 2.80, w 2.15, yellowish brown with faint brown radiating striae, fovea brown, pronounced, length 0.3, anterior end 1.65 from front end of carapace. MOQ depth 0.26, anterior w 0.22, posterior w 0.24. AER w 0.42, recurved in do view, procurved from front, PER w 0.53, procurved in do view, procurved from front. AME small and dark, other eyes pearl. All eyes ringed with black. AME separated by 2/3 of their diameter, almost touching ALE. Diameter of ALE almost twice that of AME. PME subrectangular, separated from each other and from PLE by the length of their smallest axis. PLE as large as ALE, slightly larger than PME. Clypeus almost twice as wide as diameter of AME. Chilum very small, subtriangular, brown and sclerotised. Chelicerae brown, with four teeth along promarginal cheliceral rim, the two

largest ones situated in the middle of the row, retromarginal rim with two small teeth. No shaggy hair in front of fang. Sternum oval to shield-shaped, not rebordered, yellowish brown, darker chestnut at border, length 1.60, w 1.25. Four pairs of PCT, three pairs of ICS, PLB inconspicuous and isolated. Labium brown, longer than wide. Endites about twice as long as wide, with a diagonal notch, an apical hair tuft and a serrula. Dorsal side of abdomen unicolorous yellowish grey, with four orange sigilla, a brown triangular scutum in anterior quarter and a frontal row of curved strong hairs. Ventral side of abdomen pale yellow, epigastric region orange brown and slightly sclerotised. ALS very large, cylindrical, three times as long and as wide as PLS, separated by 1/4 of their length. PMS short, slender, length 1/4 of length ALS. PLS short, subcylindrical, with a short, blunt apical segment. Legs unicolorous brown, trochanters not notched, no retrocoxal hymen present, no feathery hairs. Patellar indentation narrow, 2/3 of pa length.



Figs. 1-6: Line drawings of *Zelotes henderickxi* sp. n. and *Vankeeria catoptronifera* sp. n. 1. *Zelotes henderickxi* male palp ve (left) and rl (right) view. 2-6. *Vankeeria catoptronifera*, female. 2. Habitus, do view. 3. Eyes, dorso-frontal view. 4. Epigyne, do view. 5. Leg I, pl. 6. Leg II, pl. Scale bars: 1 = 0.5; 3-4 = 0.25; 2, 5-6 = 1.

Leg formula 4123. Metatarsi III and IV with strong vt comb typical for the genus. Tarsi with two toothed claws and without claw tufts or tenent hairs. Leg spination (Fig. 14) fe: palp do 0-1-2; I pl 0-0-1 do 1-1-0; II pl 0-0-1 do 1-1-0; III do 1-3-2; IV do 1-3-2; pa: palp pl 1-0-0 do 0-0-1; III rl 1-0-0 ti: palp do 0-0-1; III pl 1-1-0 do 0-2-0 rl 1-1-0 ve 2-2-2; IV pl 1-1-0 do 0-2-0 rl 1-1-0 ve 2-2-2; mt: II plv 1-1-0 rlv 1-0-0; III pl 0-1-1 do 2-2-2 rl 0-1-

1 ve 2-2-0; IV pl 0-1-1 do 2-2-2 rl 0-1-0 ve 2-2-0; ta: palp pl 0-0-1 do 0-2-0 rl 0-1-0 ve 0-0-1.

Male palp as illustrated (Figs. 1, 8-9), with a large, arched embolar base, a large, hook-shaped terminal apophysis, a subtriangular MA and a long, simple blunt RTA.

Female: unknown.

Etymology

The species is named after Hans Henderickx, who collected the type specimen.

Distribution. Only known from the type locality.

Discussion

Z. henderickxi clearly belongs in the *Z. tenuis* group by its arched embolar base, the shape of its terminal apophysis and its distally oriented embolus (Senglet, 2011, for terminology of palpal sclerites see Senglet, 2004: fig. 1b and Platnick & Shadab, 1983: fig. 2). Although the spider fauna of the Canary Islands has been extensively studied (Wunderlich, 1987, 1992), only five species of the large genus *Zelotes* have been mentioned from them (Wunderlich, 2011). Only one of these, *Z. manzae* (Strand, 1908) is considered endemic for the islands (Platnick, 2012; Wunderlich, 2011). The present new species seems to be the second endemic *Zelotes* from the Canary Islands.

Family Liocranidae

***Vankeeria* gen. n.**

Figs. 2-6, 10-13, 15.

Diagnosis

Vankeeria is somewhat similar to *Sphingius* Thorell, 1890, but differs from it by the presence of strong ventral spine pairs on ti and mt I and II. *Vankeeria* also shows some affinities to *Apostenus* Westring, 1851, but differs from it by the absence of plv spines on fe I, the absence of do spines on ti III and IV, the large AME, the absence of a median septum in the epigyne and the abdominal pattern.

Description

Medium sized (5) spiders. Carapace orange brown, punctate (Fig. 12). A short but distinct fovea in posterior third. Chilum small and sclerotised, single, subtriangular. Eyes in two transverse rows of four, in fr view both eye rows procurved (Fig. 3); in do view AER slightly recurved, PER recurved (Figs. 2, 12). All eyes ringed with black, AME dark, other eyes pearl (Fig. 3). PME almost circular. MOQ widest posteriorly. Clypeus equal to diameter of AME. Chelicerae yellow, tapering towards tip. Fangs sickle-shaped, with one large, knee-shaped shaggy hair in front. Sternum shield shaped, smooth, yellow and shiny, not rebordered. Four pairs of PCT present, no ICS. PLB weak and thin, isolated. Labium subtrapezoidal, somewhat broader than long, with thickened white anterior rim. Endites subrectangular, twice as long as wide, with a diagonal transverse notch, a small apical hair tuft and a thin serrula. Dorsal side of abdomen dark grey with several large, striking white patches (Figs. 2, 12). Ventral side of abdomen pale cream, except for a dark grey ring around the spinnerets. No do or ve abdominal sclerites present. ALS conical, PMS subtriangular, PLS cylindrical. Legs unicolorous yellow brown (Fig. 12). No retrocoxal hymen, no trochanter notch. Patellar indentation long and narrow, half as long as patella. Leg formula 4123. Femora without median apical spine, ti I and II with 5-6 ve spine pairs, mt I and II with 2 ve spine pairs (Figs. 5-6, 15), ti and mt III and IV without do spines. Dense ve preening brush on mt III and IV. Tarsi without claw tufts, but with several pairs of tenent hairs, claws pectinate.

Epigyne a sclerotised plate with a wide anterior hood and anterior CO (Figs. 4, 13).



Figs. 7-13: Colour photographs of *Zelotes henderickxi* sp. n. and *Vankeeria catoptronifera* sp. n. 7-9. *Zelotes henderickxi*, male. 7. Habitus, do view. 8. Male palp ve view. 9. Male palp rl view. 10-13. *Vankeeria catoptronifera*, female. 10. Leg II, tarsal tip. 11. Leg I, tarsal tip. 12. Habitus, do view. 13. Epigyne, ve view. Scale bars: 7, 12 = 1; 8-9, 13 = 0.25; 10-11 = 0.1.

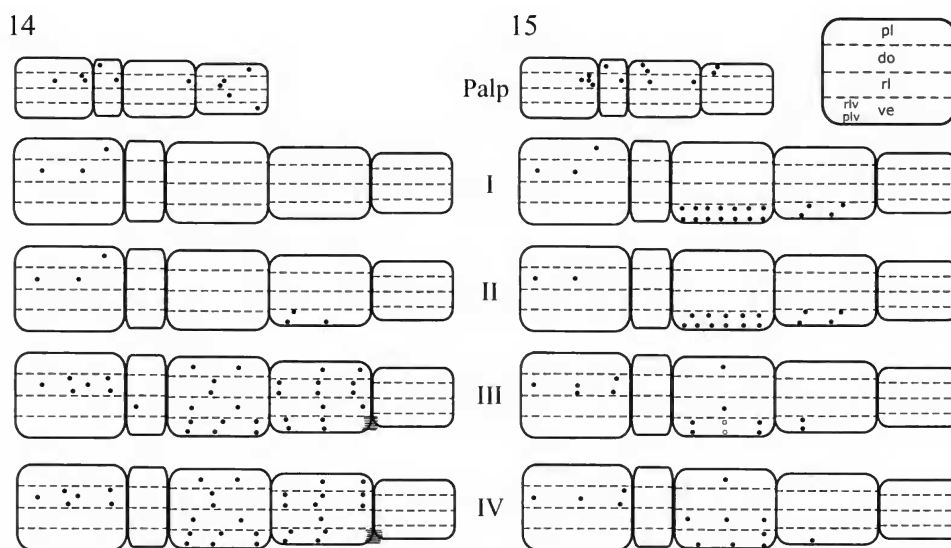
Etymology

The genus is named in honour of Johan Van Keer, who collected the only specimen of the type species, and his brother Koen Van Keer, who spares no effort to popularise arachnology to the general public.

Discussion

Whether *Vankeeria* should be placed in Corinnidae or Liocranidae is complicated by the fact that both families lack distinct synapomorphies (Platnick & Baptista, 1995; Bosselaers & Jocqué, 2002; Wunderlich, 2008). However, the combination of a flat carapace, a shaggy hair in front of the fang base, absence of abdominal sclerotisation, ti

and mt I and II with several ve spine pairs and an epigyne with an anterior hood pleads in favor of a place in Liocranidae.



Figs. 14-15: Leg spination schemes. Legend in upper right corner. White dots are spines present on one leg and absent on the other. 14. *Zelotes henderickxi*, male. 15. *Vankeeria catoptronifera*, female.

***Vankeeria catoptronifera* sp. n.**

Figs. 2-6, 10-13, 15.

Type material. Holotype female, Greece, Peloponnese, Achaia, A. Zachlorou, Vouraikos Gorge, alt. 1000 m, hand captured, 14 April 2000, J. Van Keer leg. [CJVK1971], deposited in RBINS.

Description

Male unknown.

Female (holotype). Total length 4.70. Carapace length 1.85, w 1.70, fovea brown, length 0.20, anterior end 1.20 from front end of carapace. The orange brown, punctate carapace is covered by sparse white silky hairs in the cephalic region. AER w 0.48, PER w 0.58. AME separated from each other by half of their diameter, almost touching ALE. AME slightly smaller than ALE. PME almost circular, separated from each other by 1.5 times their diameter and from PLE by 3/4 of their diameter. PME slightly smaller than PLE. PLE slightly smaller than ALE, the same size as AME (Fig. 3). MOQ depth 0.27, anterior w 0.24, posterior w 0.27. Promarginal cheliceral rim with three teeth, largest one in the middle and smallest one furthest from fang base, retromarginal rim with two small teeth close to fang base, smallest one closest to fang base. Sternum length 1.18, w 1.05. Abdomen with a frontal row of a few sparse strong setae. Dorsal side of abdomen dark grey with a light grey triangular anterior patch, then, halfway between anterior and posterior end, two lateral subcircular white patches containing a faint sigillum, those patches in turn followed by two faint, light grey chevrons and an oval transverse posterior white patch (Figs. 2, 12). ALS separated by 1/3 of their length, PLS separated by their length. Small ve, non-erectile bristles on mt I and II. Feathery hairs present. Tarsi with toothed claws and six pairs of tenent hairs (Figs. 10-11). Leg formula 4123. Leg spination (Fig. 15) fe: palp do 0-1-3 rlv 1-1-1; I pl 0-0-1 do 1-1-0; II do 1-1-0; III do 1-2-2; IV do 1-1-2; pa: palp pl 1-0-0 do 0-0-1; ti: palp pl 2-0-0 do 1-0-1; I plv 1-1-1-1-1-1 rlv 1-1-1-1-

1-1-1; II plv 1-1-1-1-1-1 rlv 1-1-1-1-1; III pl 0-1-0 rl 0-1-0 ve 2-(2)-2; IV pl 0-1-0 rl 1-1-1 plv 1-1-1 rlv 0-0-1; mt: I plv 1-1 rlv 1-1; II plv 1-1 rlv 1-1; III ve 2-0-0; IV rlv 1-0-0. Epigyne (Figs. 4, 13) a subrectangular brown sclerotised plate with a wide anterior hood and large anterior entrances with a longitudinal sclerotised rim. Vulva: in order not to damage the unique type specimen, the vulva was not studied.

Etymology

The species epithet *catoptronifera*, from the Greek *κατοπτρον*, mirror, refers to the mirror-like white patches on the do side of the abdomen of the new species.

Discussion

Vankeeria catoptronifera sp. n. is one of the only liocranids known with a strikingly marked abdomen. *Sphingius octomaculatus* Deeleman-Reinhold, 2001 also has white spots on a dark abdomen, but these are much smaller and fainter than those of *Vankeeria*. Apparently this beautiful species is very rare and elusive. The type specimen is described by Van Keer as a fast runner.

Distribution. Known only from the type locality.

Acknowledgments

Thanks are due to Johan Van Keer for the loan of the type specimen of *Vankeeria catoptronifera* from his personal collection, and to Hans Henderickx for collecting and donating the type specimen of *Zelotes henderickxi*. The author is also grateful to Jörg Wunderlich for studying the type specimen of *Zelotes henderickxi* and recognising it as a new species, and to Antoine Senglet for confirming this. Thanks are also due to Charles Haddad, Martín Ramirez, Rudy Jocqué and Norman Platnick for fruitful discussions on *Vankeeria*, and to Christa Deeleman-Reinhold for the loan of a specimen of *Sphingius octomaculatus*.

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